



# IDDS Tairāwhiti 2024

**MITD-Lab**  
designing for a more equitable world



# About IDDS Tairawhiti

IDDS Tairawhiti 2024, was a 2.5 weeks hands on summit that was hosted in Tolaga Bay, with participants and community engagement in Tolaga Bay, Ruatoria and Wairoa communities.

The summit was hosted under the theme *“Resilient Indigenous Communities”* from October 26<sup>th</sup> to November 12<sup>th</sup> and had participation from 10 countries.

Tolaga Bay Inn Charitable Trust were recently awarded the rights to organize and host the first International Development Design Summit (IDDS) Summit in **New Zealand** and **Oceania** by the International Development Innovation Network (IDIN) Global Steering Committee.

IDDS Tairawhiti was supported by Uawa Rugby Club, Taiki E, Edmund Hillary Fellowship, These Hands GSSE and MIT D-Lab with funding from the Eastern Institute of Technology (EIT), UNESCO New Zealand Commission, UniServices at the University of Auckland, Te Aitanga a Hauiti Centre of Excellence Trust, Te Runanganui O Ngati Porou.



# Our why



## The Goal

The goal of the summit was to upskill and connect local Māori community innovators with other indigenous change-makers, innovators, designers, sector specialists, faculty and students of indigenous innovation, to tap into various indigenous knowledge systems and skills to use the IDDS philosophy of co-creating with others to develop solutions that can improve the lives and livelihoods of people in the Tairāwhiti and Wairoa regions.

## About IDDS

International Development Design Summit (IDDS) was co-founded by MacArthur Grant Genius Amy B Smith and Prof Benjamin Linder based at Olin College of Engineering. The first IDDS was in 2007 at MIT D-Lab. IDDS summits are 2-4 weeks hands-on immersive experiences of designing with communities and supporting them with the necessary skills to design for and by themselves. It is a more powerful approach to empowering communities than designing solutions for them.



# The Summit

- Introduction to the Design Process
- Design Challenges
- Build Its
- Information Gathering
- Problem Framing
- Field & Community Visits
- Idea Generation
- Sketch Modelling
- Field & Community Reviews
- Prototyping
- Solution Refinement
- Community Showcases
- Continuity Planning



# The Participants

New Zealand

22 Participants and 7 Facilitators

38% Females and 62% Males

USA

Canada

Malaysia

Uganda

Kenya

Botswana

Pakistan

South Africa

Switzerland



# The Projects

These 6 project challenges/opportunities and focus areas were supported in 3 different communities:

## Tolaga Bay

### Areas of focus

- Enhanced livelihoods
- Water
- Clean energy
- Climate change mitigation and adaptation
- Agricultural processing
- Food Production



Water Quality Testing and Monitoring Technology with Taniwha Connections



Multiple Charcoal Briquette Pressing Technology with Slash for Cash

## Ruatoria



Hemp Waste Processing Technology with Rua Biosciences



Brick Making Technology with Ruatoria Earth Builders

## Wairoa



Traditional Medicine (Rongoa) Processing Technology with Traditional Medicine Makers



Biochar Fertilizer Mixing Technology with Slash for Cash



# Project: Multiple Briquette Press



Connie Pewharangi-Potae (Uawa), Jessie Thatcher (Uawa), Amy Smith (USA), Renata Haerewa (Rangitukia)



Every year, the forestry industry produces hundreds of tonnes of slash, which causes major environmental damage to our rivers, beaches, oceans and forests. Slash for Cash is a social enterprise that carbonises slash and transforms it into charcoal briquettes. Our briquette press will produce more than 250 high-quality briquettes per hour, providing local jobs, and a useful, environmentally-friendly and economical product for cooking and heating for our whanau.



# Project: Water Quality Monitoring and Testing



Forestry and climate change are damaging our community's rivers, and communities don't have the tools and techniques to quantify and document these changes. We want to develop the tools and training to engage our communities in data collection. As a result, communities will be able to measure, monitor, and articulate the health of their rivers to drive change at different levels of governance. Taniwha Connections is spearheading a community-led, culturally aware approach to water monitoring that impacts change.



Left to Right: Mere Tamanui (Uawa), Fern Maaka (Rangitokia), Rewiti Marsh (Uawa), Ivraj Seerha (USA) & Liz Hunt (Canada)





# Project: Hemp Waste Processing Technology



Dinake Daniel Motona (South Africa), Nur Atiqah Abdul Taib (Malaysia), Thabiso Mashaba (Botswana), Robin Te Moana Tompson (Ruatoria), Navarone Walker (Uawa)



The current way of dealing with hemp waste is to burn it and turn it into compost. The Rautini Koi team is proposing alternative solutions to process hemp waste which will create employment and income opportunities in the Ruatoria community whilst addressing housing challenges due to costly building materials. The process produces two materials: hemp hurds and hemp fibers. The hurds can create hempcrete bricks, and the fibers are spun into ropes, which can be crafted into different products. Four appropriate technology tools have been co-created to support this process and value chain: the Decorticator, Comb, Brick Mould, and Rope Spinner.



# Project: Brick Making Technology



The traditional method of preparing earth bricks without technology is labour-intensive and time-consuming. The BrickFast team has developed a tumbler mixer and a compressor that help speed up the slurry mixing & compressing processes, reducing labour and strain. This enables Ruatoria's earth builders to make bricks faster and more efficiently in their own backyards as the materials required to build these technologies are easily accessible. These locally buildable tools can promote healthy & sustainable housing options that are affordable, breathable, and fire-resistant. These bricks have natural thermal mass insulation and utilize our local natural resources. This will greatly benefit the people of Ruatoria and the wider community.



David Chen (Canada), Arihia Maora Kaiwai (Ruatoria), Ehsam Ullah (Pakistan), Hank Schoen (USA), Sarah Wilkie – not in picture,(Uawa)



# Project: Flax Seed Deseeding Technology



Harakeke (New Zealand flax) seeds contain many healing properties. However, the extraction process is tedious, which means many rongoā practitioners rarely use them. Our approach is to simplify the deseeding process which is currently done by hand. This will save the practitioners time and energy, making the seeds more available. Using harakeke seeds will create new opportunities for rongoā and healthier communities.



Haley Grace - Hollis (Aotearoa), Faith Kathoka (Kenya), Paraone Luiten - Apirana (New Zealand), Aymee Lewis (New Zealand)



# Project: Biochar Fertilizer Mixing Technology



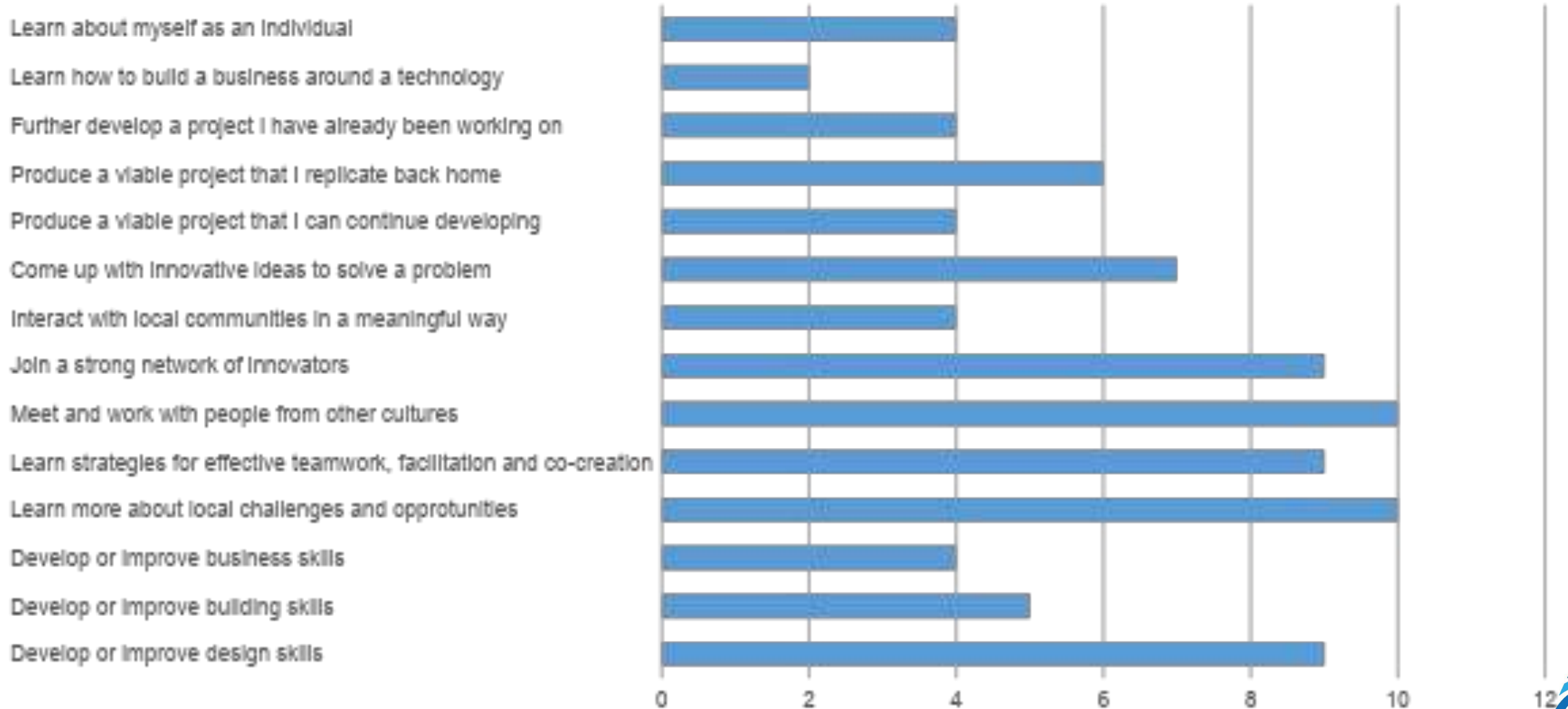
Rogers Muduku (Uganda), Christian Belmont (Wairoa),  
Whitu Mikara (Wairoa), Matene Maraki (Gisborne),  
Charmaine Clark – Not in picture (Gisborne)



Low soil productivity in flood-affected areas is a major problem, the top soil is often left without nutrients to support agriculture. Currently, we mix the Bio-Char and the animal manure by hand which is unhygienic and slow. We have designed a machine that makes the process fast and easy, increasing the volume of fertilizer produced, to enrich and enhance the whenua and give higher yields.



# Participants' Goal for the Summit



# Quote

Get to learn more about everyone who has gathered for this event... Everyone, international participants get to learn the different aspects of New Zealand.

*~Fern, New Zealand~*

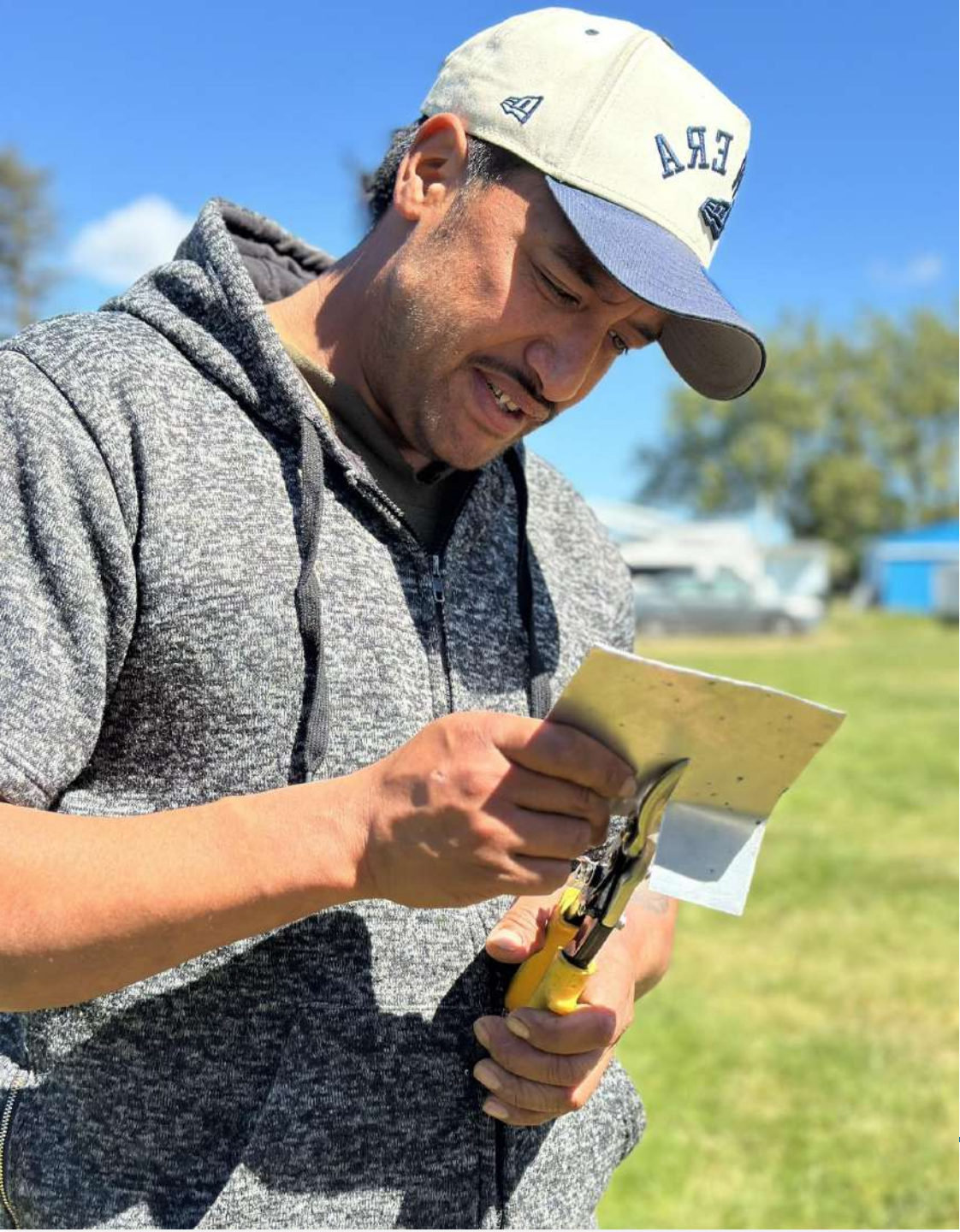


# Quote

I want to learn how to facilitate an effective design process so I can apply that to my own business back home. I also hope to join a network of innovators who are less capitalism driven. Also, checking out a new culture is a fun bonus.

*~Ivraj, USA~*





## Quote

For me, IDDS will be successful if I got the knowledge and the skills to use for my daily life ... bring the skills and learning ooon!

*~Renata, Aotearoa ~*

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# Quote

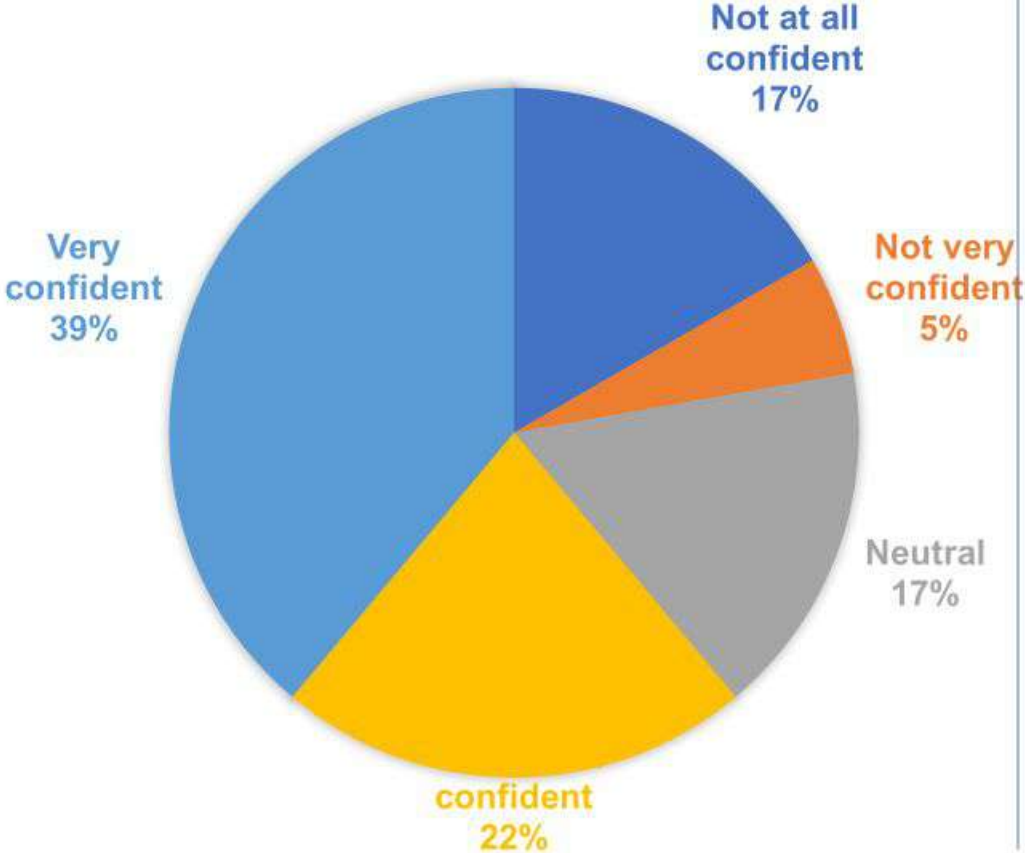
I really want to meet many people who have different cultures and beliefs to share with the group. Each of our everyday lives looks incredibly different but we all share similar issues that brings us together to innovate. I think that that is a really special opportunity to open my eyes to new ideas and become a more conscious being.

*~Hank, USA ~*

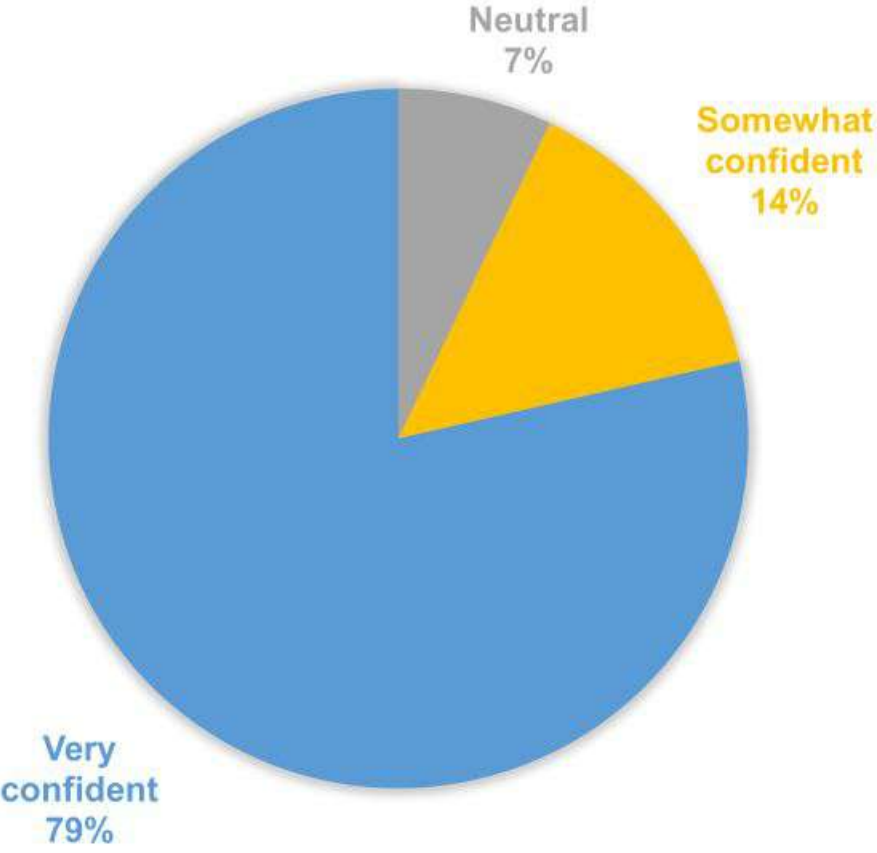


# Using the Design Process to Solve Problems

CONFIDENCE LEVEL BEFORE



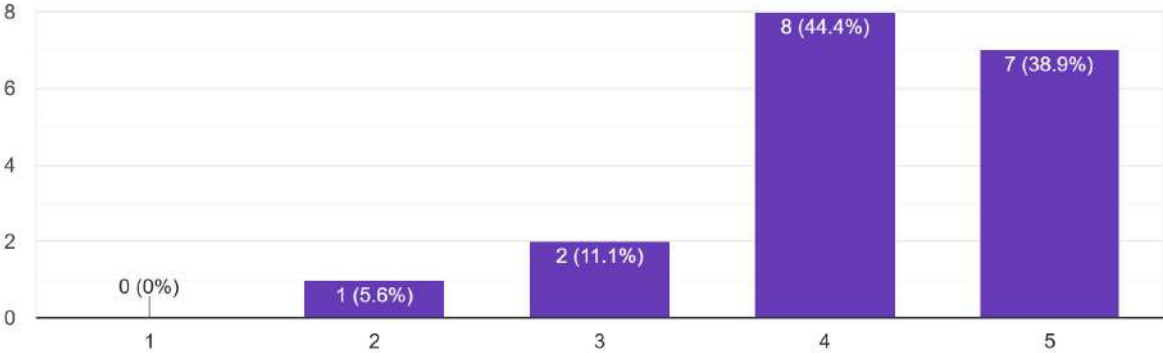
CONFIDENCE LEVEL AFTER



# Confidence Level on Co-Creation Before and After the Summit

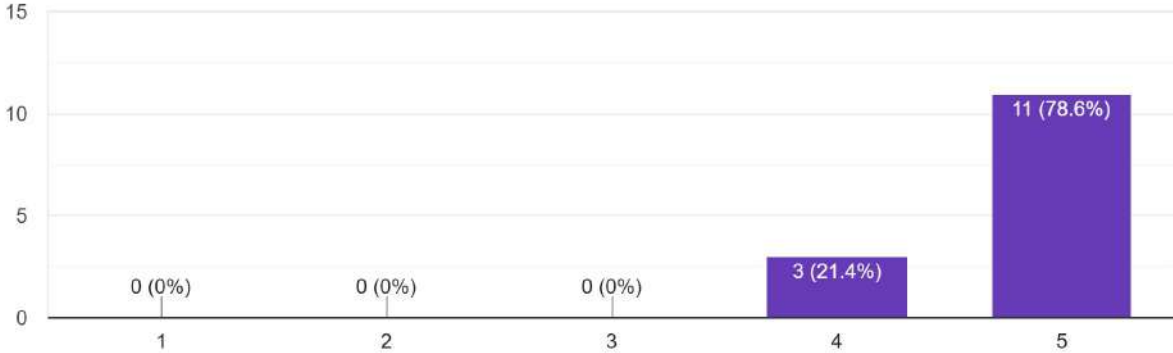
Before

Working together with users to create solutions (Co-creation)  
18 responses



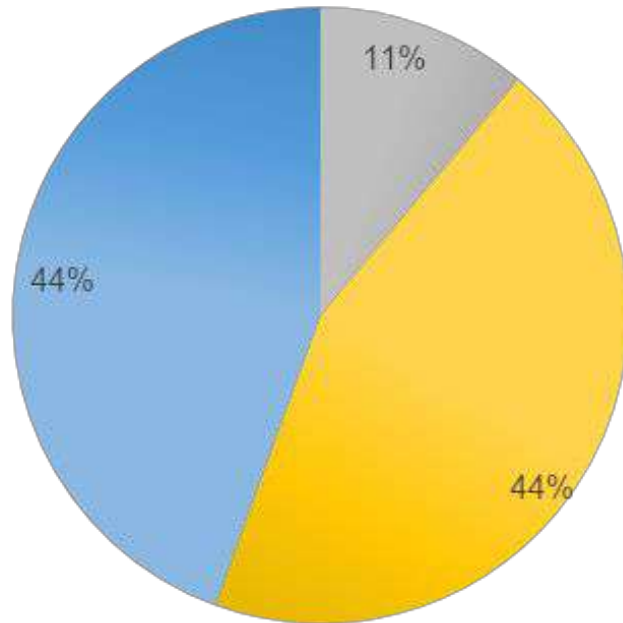
After

Working together with users to create solutions  
14 responses



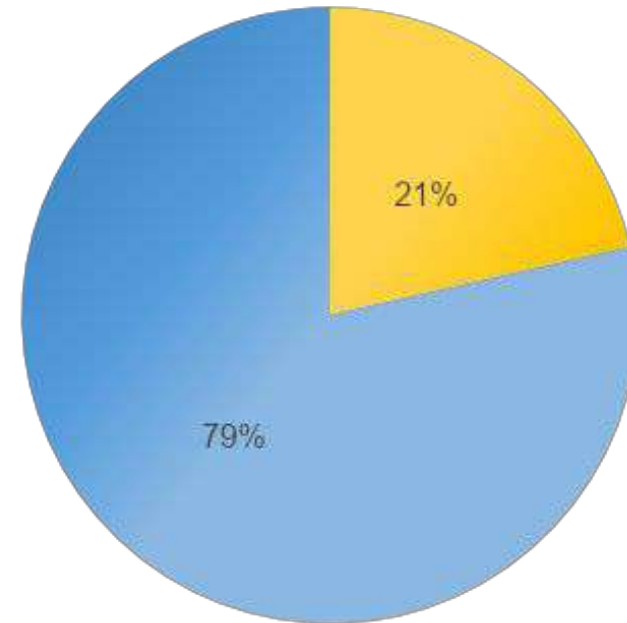
# Working in Diverse Teams

Confidence level before



- Not at all confident
- Not very confident
- Neutral
- Somewhat confident
- Very confident

Confidence level after



- Not at all confident
- Not very confident
- Neutral
- Somewhat confident
- Very confident



# Skills Gained

Public speaking, sketch modelling

That these new ways I have seen through my own eyes is something else and will be put to test

Design process, sketch modelling and support others dreams and aspirations

The Māori culture and their strong connection to nature and their communities

Cooking, presenting, design, and teamwork skills

How to engage with different people from around the world

Working with metals, tools, teamwork, confidence - learning to speak in front of others

Community engagement, pitching and presentation

Aluminium casting, Teamwork

Networks. Learnt new process. Learnt a bit about IDDS

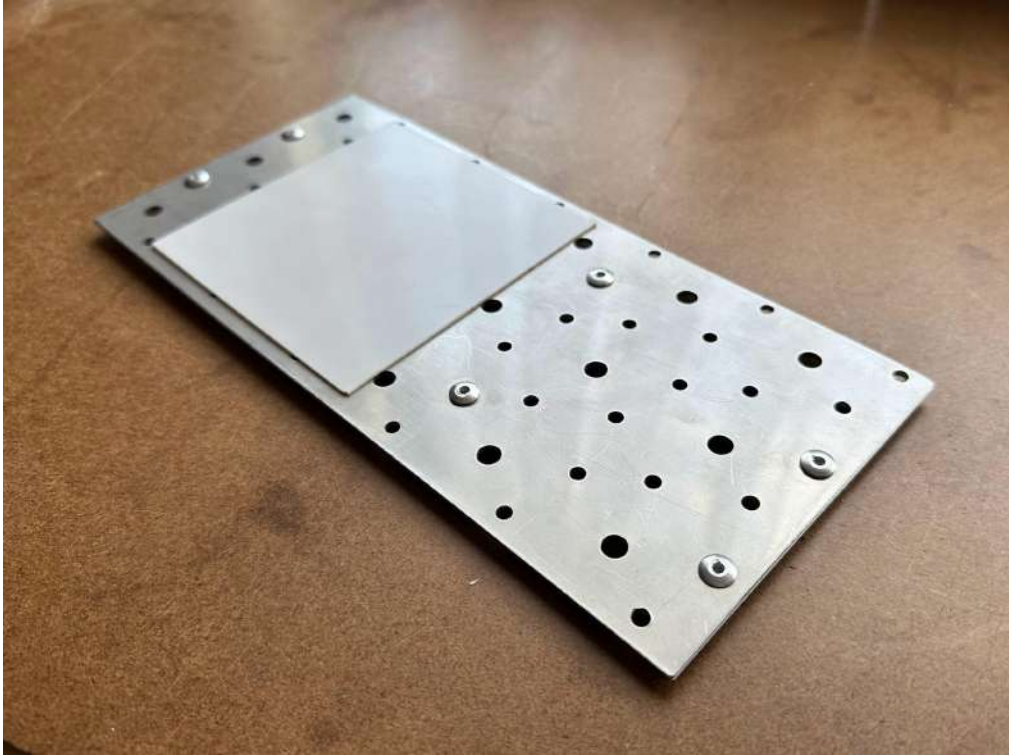
Importance of designing for your user and how important it is to consider their feedback. I think in general I have also gained a sense of resourcefulness

Co-creating and the design process. I have learnt woodwork, metalwork and electrical basic skills. I have gained knowledge around other world cultures

Teaching, being considerate to students and the spiritual element involved in making. New perspectives on design, engagement techniques and the content itself.



# The Prototypes - Tolaga Bay



Water Quality Testing and Monitoring Technology



Multiple Charcoal Briquette Pressing Technology



# The Prototypes - Ruatoria



Brick Making  
Technology



Hemp Waste Processing  
Technology



# The Prototypes - Wairoa



Traditional Medicine (Rongoa) Processing Technology



Biochar Fertilizer Mixing Technology

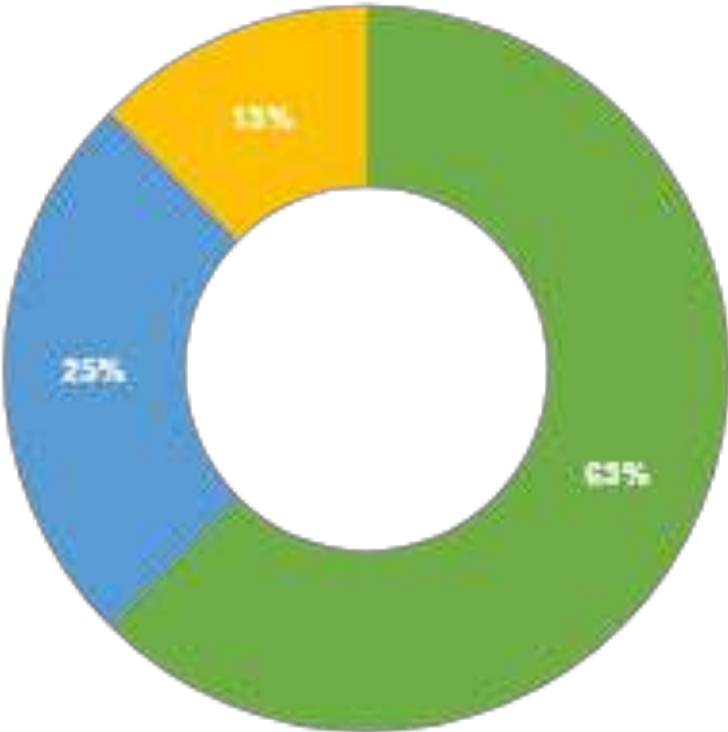




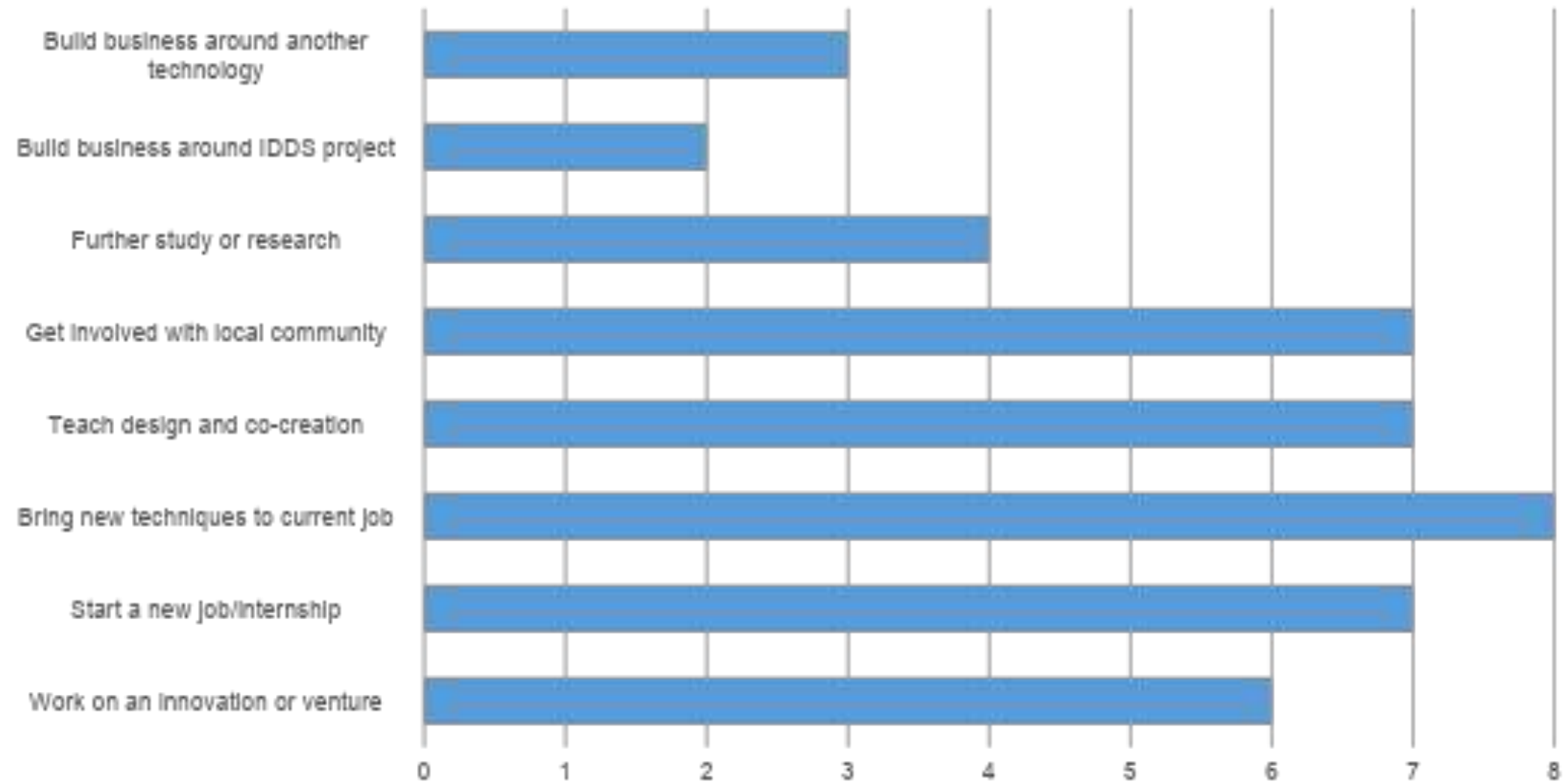
# Project Continuity

## Involvement with the Project after IDDS

■ Continue actively developing the project ■ Stay in touch but not work on it directly ■ No plans to continue with the project



# Primary Goal 12 Months After IDDS



## Quote

My future vision after IDDS Te Tairāwhiti 2024 is to continue engaging, supporting and nurturing the relationship between East Coast Māori communities and myself/team.

*~Aymee, New Zealand~*



# Quote

I hope that in the future, I will be able to help organize an IDDS and continue to work on improving myself through stepping out of my comfort zone. I also hope that our project continues to thrive and be used in the coming months and years after the summit.

*~Participant, IDDS Tairawhiti 2024~*





## Quote

I hope that the local participants can keep driving their projects and my dream is to come again and support the project through facilitating collaborations with my country and industry players.

*~Dinake, South Africa~*

# Quote

A lot. Business side of things. I love the framework. Everything about the past two weeks has been an awesome learning experience. Now I'm thinking business. How can I create something that benefits myself, my whanau and my community.

*~Haley, Aotearoa ~*





## Quote

The structure all good most beautiful  
experience ever facilitator's very good  
program beautiful I came here alone I  
now go with new friends and whanau

*~Whitu, Aotearoa~*

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## Quote

I can see this style of community led research being core to my research in academia going forward. I hope many of the connections we made with the community lead to opportunities to help them with other projects. I also hope that our project develops and becomes useful to communities and practitioners throughout New Zealand. I hope to remain connected to the global community we have created at this summit, and I dream that we will come together again in the future.

*~Paraone, New Zealand~*

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# Quote

I think I have developed my cooking, presenting, design, and teamwork skills. For cooking, I helped out with close to half the meals during the summit and it really helped me practice cooking as I didn't have much experience before IDDS. In terms of presenting and design, I was able to present our prototypes/project to both the Ruatoria community, but also at Tolaga Bay and Gisborne. In terms of teamwork, I was able to work with people that think very differently from the way I do which I haven't had much experience with recently so I was able to learn how to collaborate and agree on different opinions.

*~Participant, IDDS Tairawhiti 2024~*





## Quote

I am going to run a social enterprise accelerator programme next year, hopefully to create more innovative social entrepreneurs in my state, not unlike IDDS' structure and goals. In fact, it could be an IDDS spin-off

*~Atiqah, Malaysia ~*

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# Quote

The summit is pretty interesting thanks to the organisers and supporters for making this all happen!

*~Matene, Aotearoa~*





# NGA MIHI

See you in 2025!



